



# Optimizing the Dev/Test Cycle

*TAB, October 25, 1999*

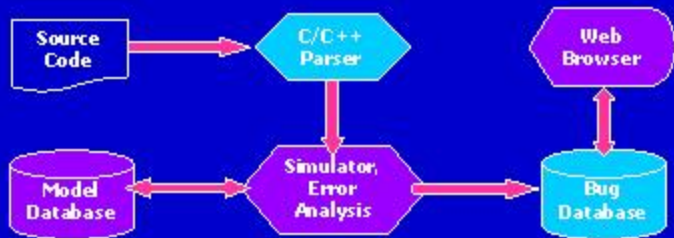
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# Improving Quality of Check-ins

- Prefix today – high level



- Demo

## Static Analysis – PREFIX 3.1

- **Deployments to date**

- NT, IIS, Exchange storage, SQL, MDAC (XML), IE, AppServer
- NT kernel average: 1 fixed bug / KLOC
- Overall ~20 MLOC simulated

- **PREFIX 3.1**

- Self-deployment model
- Integration of MS technologies
- Bug fixes for Tier-1 deployment
- Released earlier this month



## PREFix – What's Ahead?

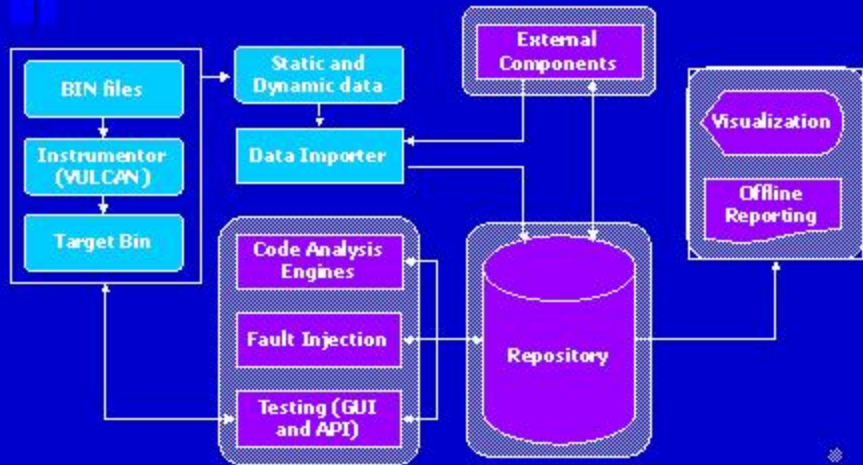
### ■ Prefix 3.X


- Add support for MS priority bugs
- Ease deployment
- Front-end abstraction
- Target release: Jan, 00

### ■ Pfx2k

- Enable model sharing
- Enable detection of API rule violations
- Move correctness to pre-check-in
- Target release: 2Q, CY00

# Improving Test Effectiveness





## Coverage Analysis – Sleuth 1.0

- **Goals**

- Guide Test to uncovered areas
- Guide Test to error prone code
- Improve overall coverage measurements

- **Customers**

- NT, SQL, Exchange, IIS, IE, COM+, Millenium


- **Released Sep '99**

- **Demo**



## Sleuth – What's Ahead?

- **Sleuth 1.x**
  - Live coverage
  - Performance improvements
- **Sleuth 2.0**
  - Coverage abstraction by components, GUI
  - Advanced analysis & visualization to facilitate decision making, e.g., Test case prioritization
- **Long-term: Integration with test framework**
  - Integration with fault injection, GUI execution framework, static analysis



## Fault Injection - Injector 1.5

- **Goal: Drive usability in each diverse environment**
- **Key features**
  - GUI based application
  - Code generation
  - Support for NT services and device drivers
  - Expanded set point support
- **Released Sep '99**
- **Demo**





## Injector – What's Ahead?

- **Injector 2.0**


- Goal: Deliver comprehensive infrastructure for fault injection
- Component architecture to support automation

- **Medium-term**

- Automated fault analysis

- **Long-term: Guided fault injection**

- Integration with code coverage, static analysis
- Fault analysis metrics



## Other Projects in Pipeline

- GUI execution framework
- Post-mortem debugging prototype
- Test case prioritization



# PPRC Testing & Correctness Team

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